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Superconducting vortex dynamics in nanostructured hybrids based on Fe single-crystal nanotriangles JOSE VICENT, ALICIA GOMEZ, ELVIRA GONZALEZ, Universidad Complutense, 28040 Madrid (Spain), MIGUEL IGLESIAS, JAVIER PALOMARES, Instituto Ciencia Materiales, CSIS, 28049 Madrid (Spain), NADIA SANCHEZ, Instituto de Magnetismo Aplicado,28230 Madrid, (Spain), FEDERICO CEBOLLADA, Escuela Superior Telecomunicacion, Universidad Politecnica, 28040 Madrid (Spain), JESUS GONZALEZ, Instituto Ciencia Materiales, CSIS, 28049 Madrid (Spain) — Arrays of Fe single-crystal nanotriangles have been fabricated by Electron Beam Lithography. These arrays are embedded in superconducting Nb thin films. We have studied the superconducting vortex lattice motion on the periodic pinning potentials induced by the magnetic arrays. The vortex dynamics can be controlled through tailoring the magnetic stray field configurations. Which are due to different magnetic remanent states of the Fe single-crystal nanostructures. These configurations have been modified by changing the direction of the saturating applied field and also by using different orientations of the Fe magneto-crystalline easy axes within the triangles.

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